METHOD OF AND APPARATUS FOR EXECUTING FUNCTION USING COMBINATION OF USER'S KEY INPUT AND MOTION

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the priority of Korean Patent Application No. 2004-0079202, filed on Oct. 5, 2004, and the priority of Korean Patent Application No. 2004-0115071, filed on Dec. 29, 2004, in the Korean Intellectual Property Office, the disclosures of which are incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a method of and apparatus for inputting a character and selecting a function in a terminal such as a mobile phone, and more particularly, to a method of and apparatus for inputting a character or executing a function using a combination of a user's key input and motion.

[0004] 2. Description of Related Art

[0005] Usually, a user can input Korean characters, English characters, and numbers using a keyboard installed in a mobile phone. The number of keys on the keyboard is limited, and to input Korean and English characters, a plurality of Korean and English vowels/consonants are allocated to a single key. In addition, to repeatedly input one character among characters allocated to one key, a user must repeatedly press the same key at designated time intervals or must repeatedly press the same key and then another special key.

[0006] In particular, in a Korean character input method using a "cheon-ji-in" system (where "cheon", "ji", and "in" literally mean heaven, earth, and man, respectively), to repeatedly input one consonant among several consonants allocated to one key, a user must press the key once and then press the key once again after a designated period of time or must press the key and then press the key again after pressing a direction key. If the user presses the key again within the designated period of time after pressing the key, another consonant allocated to the key is input. English characters are input in the same manner. Accordingly, since the keys must be pressed a number of times to input a vowel or a consonant, the entire input time of a character can be long.

[0007] **FIGS. 1A and 1B** illustrate the structures of character input buttons of a mobile phone. A conventional method of entering characters will be described with reference to **FIGS. 1A and 1B**.

[0008] **FIG. 1A** illustrates the structure of English character input buttons of a mobile phone. A user can input three alphabetic characters using one button. For example, when entering the word "CLEAR", a user consecutively presses a button **100** three times, then consecutively presses a button **110** three times, then consecutively presses a button **120** twice, then presses the button **100** once, and then consecutively presses a button **130** twice.

[0009] **FIG. 1B** illustrates the structure of Korean character input buttons of a mobile phone using the "cheon-ji-in" system. Two consonants or a single vowel can be entered using one button. For example, when entering the word "특허" a user consecutively presses a button **140** twice, then presses a button **150** once, then presses a button **160** once, then consecutively presses a button **170** twice, presses a button **180** once, and the presses a button **190** once.

[0010] Recently, mobile phones having multiple functions so that a user can access wireless Internet to obtain information, listen to music, and take a photograph using the mobile phone have been introduced. Compared to the many functions added to the mobile phone, the number of keys provided in the mobile phone is limited. Accordingly, as a new function is added, the number of times that a user has to press a key to execute a function increases.

[0011] For example, to download the newest ringtone from the wireless Internet using a mobile phone, a user needs to press several buttons four times: a first time for connecting to the wireless Internet, a second time for selecting a My Bell menu after connecting to the wireless Internet, a third time for selecting a Ringtone menu under the My Bell menu, and a fourth time for selecting the Newest menu under the Ringtone menu.

[0012] As described above, when inputting characters or executing a function in a mobile phone using a conventional method, a user is inconvenienced by having to press several buttons many times. In particular, when inputting characters, since the user may need to consecutively and quickly press one button several times, many errors may occur and a considerable time may be spent on this activity.

BRIEF SUMMARY

[0013] An aspect of the present invention provides a method of and apparatus for inputting a character or executing a function with a small number of key inputs by using a combination of a user's key input and motion.

[0014] According to an aspect of the present invention, there is provided a method of executing a function in a communication terminal, including receiving a key input from a user, sensing a motion of the user using a sensor, recognizing a pattern of the sensed motion, and executing a function corresponding to a combination of the key input and the recognized motion pattern.

[0015] The executing of the function may include generating a character corresponding to the combination of the key input and the recognized motion pattern, and displaying the generated character.

[0016] The recognizing of the pattern may include recognizing the pattern of the user's motion using an artificial neural network, template matching, a hidden Markov model, or a support vector machine (SVM).

[0017] The method may further include receiving one motion pattern among designated motion patterns, one key input among designated key inputs, and a function to be executed from the user; and matching a combination of the received motion pattern and the received key input with the received function.

[0018] Alternatively, the method may further include receiving a motion, one key input among designated key inputs, and a function to be executed from the user; and